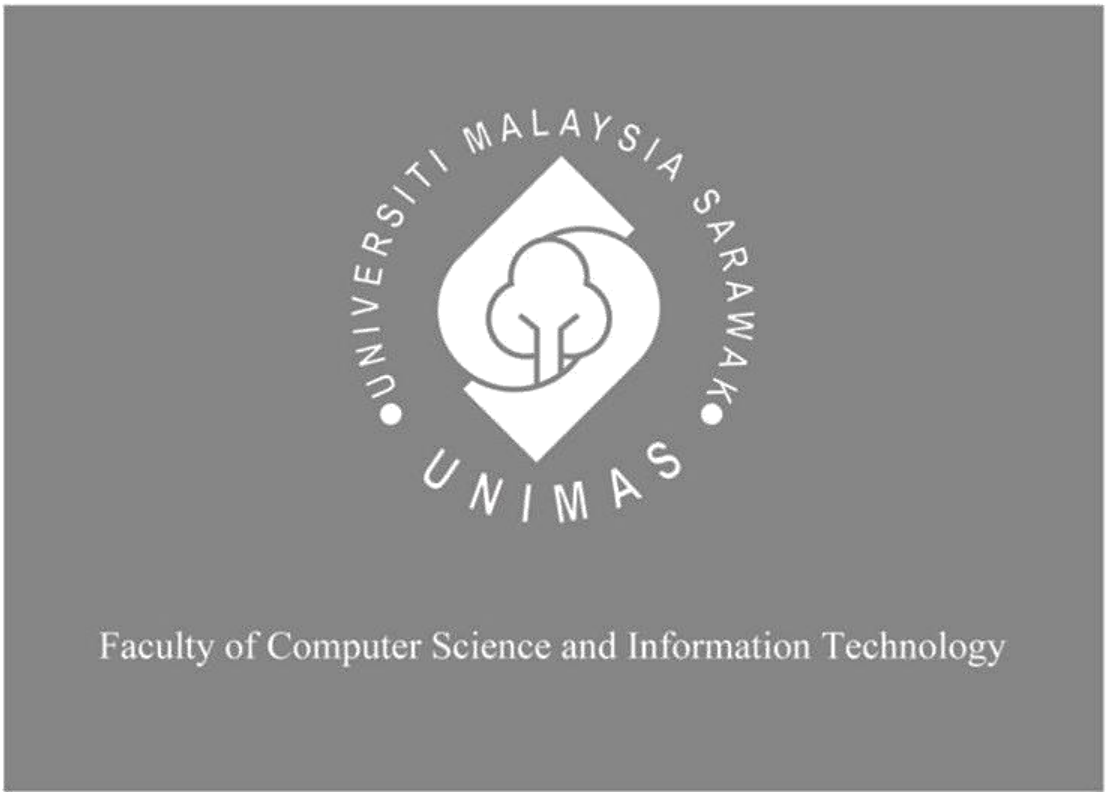

E-Auction Bidding and Selling System

LIM JIA WEI

Bachelor of Computer Science with Honours (Software Engineering)

2019

E-Auction Bidding and Selling System

LIM JIA WEI

This project is submitted in partial fulfilment of the
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Date: 14/5/19

Validated by

Dr Mohamad Imran bin Haji Bandan
Senior Lecturer
Faculty of Computer Science and Information Technology
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Abstract

In the era of information technology, online shopping plays a very important role in modern business environment. More and more people like to shop online using their smartphone or computer. E-auction bidding and selling system is developed for college students in University Malaysia Sarawak to provide a platform for buying and selling their unused goods. The system can help seller to gain extra profit and buyer to save extra money from buying second-hand goods.

In order to attract more people to use the system, the system is developed as a hybrid app which support multi-platform and different kind of devices. Designing of hybrid app will allow most of the college students are able to use the system. In addition, the system provides two type of purchasing type which is “Buy Now” and “Auction”. These will meet the requirement from different kind of person. Some of the people may want get the item urgently and some of them may spend more time to get cheaper price. In conclusion, E-auction bidding and selling system is not only allowing people to save and gain extra money but also preventing the waste of unused goods.

Abstrack

Dalam era teknologi maklumat, membeli-belah dalam talian memainkan peranan yang amat penting dalam persekitaran perniagaan moden. Semakin ramai orang ingin membeli-belah dalam talian menggunakan telefon pintar atau komputer mereka. E-auction bidding and selling system dibangunkan untuk pelajar kolej di Universiti Malaysia Sarawak untuk menyediakan platform untuk membeli dan menjual barangan mereka tetapi tidak digunakan. Sistem ini boleh membantu penjual untuk mendapatkan keuntungan tambahan dan pembeli untuk menyelamatkan wang tambahan daripada membeli barang-barang terpakai.

Untuk menarik lebih ramai orang menggunakan sistem, sistem tersebut dibangunkan sebagai aplikasi hibrid yang menyokong platform berbilang dan pelbagai jenis peranti. Merekabentuk aplikasi hibrid akan membolehkan sebahagian pelajar kolej akan mampu untuk menggunakan sistem. Di samping itu, sistem ini menyediakan dua jenis membeli jenis yang "Buy Now" dan "Auction". Ini akan memenuhi keperluan dari pelbagai jenis orang. Sesetengah orang mungkin mahu mendapatkan item segera dan sesetengah daripada mereka boleh menghabiskan lebih banyak masa untuk mendapatkan harga murah. Kesimpulannya, E-auction bidding and selling system ini bukan sahaja membolehkan orang ramai untuk menyimpan dan mendapatkan wang tambahan tetapi juga mencegah buangan barang-barang yang tidak digunakan.

Chapter 1: Introduction

1.1 Introduction

University Malaysia Sarawak (UNIMAS) is one of the universities in Malaysia with more than 16,000 students in the campus. Since students have to change and move to new hostel every year, there are many unwanted stuff to discard or sell to other people. In order to minimize the discard, students will usually sell their second hand goods to other people. This trait had turns this university into a huge second-hand market where peoples used to buy or sell their used good on internet. For such rich second-hand resources, we can take reasonable way to handle it, build an Internet platform, make full use of the mature technology and social environment, let the students used resources can be reasonable shared and effectively used so as to make resources communication on campus, save cost, and make waste useful (Li Zhu, 2015).

E-auction bidding and selling system is developed to ease the buying and selling of second hand products among students. E-auction bidding and selling system is very convenience and easy to use by student and it can bring benefit to both buyer and seller. To be more precise, buyer can have benefit when buying second hand stuff as the price paid is lower than buying new stuff. On the other hand, seller can also gain extra profit when selling unwanted second goods instead of discarding them.

E-auction bidding and selling system can optimize the buying and selling process as the display of products, price and also the contact details of seller can be found in the system. Students do not need to go to Facebook or WhatsApp to search their desire product one by one. They can just type the keyword of their desire products in the system and compare price with different sellers. This enables the buyer to save their time to browse through Facebook and contact the seller one by one to ask for the product details. On the other hand, the seller can also sell their product easily by just post the product details onto the system. They do not need to promote their product in Facebook or WhatsApp every day. This will encourage more people to sell their unused good to gain extra profit.

1.2 Problem statement

Many college students are willing to buy second hand stuff rather than a new one. However, many people choose to buy new stuff because it is hard to search for the stuff they want and waste time in current trading platform. Used item or fresh items which are not used need a platform on which they can be advertised to consumer (Shubhangi, Jagriti, Azad, Ananda, 2015). Most people buy and sell stuff in Facebook group or WhatsApp group which may contain many problems. Issues experienced include the sale of terrible or fake merchandise, non-conveyance of products and money scams of different sorts (Zoe, 2014). People are usually found advertising their old products in university (Shubhangi, Jagriti, Azad, Ananda, 2015). By using the ineffective platform, a lot of second-hand stuff unable to sell and end up with throwing all the stuff.

1.3 Scope

E-auction bidding and selling system is developed for the students of University Malaysia Sarawak (UNIMAS) to buy and sell their second hand goods online.

Students can choose to act as buyer or seller in this system. As a seller, they can sell their second hand goods by uploading the images, selling price and also description of the product into the website. On the contrary, a buyer can search their desire product by browsing through the website. Buyer can choose and compare different products from the search result. After the buyer found their ideal product, they can add them into the cart and create order.

In the system, it will show a payment procedure to the buyer. Buyer can choose either cash on delivery or bank transfer. Seller contact details will be shown on this page. Buyer has to contact the seller to discuss the payment method and the place and time to deliver. If the buyer has received any broken or counterfeit product, they are still able to track the seller since the seller is within UNIMAS.

1.4 Objective

i. To develop a web application which for auction, selling and buying.
ii. To design a web application that support desktop and mobile platform.
iii. To evaluate the web application on its functionality and the user experience.

1.5 Methodology

Rapid Application Development (RAD) is used as a methodology to develop the project. RAD depicts a strategy for software development which intensely underlines quick prototyping and iterative delivery (Andrew, 2016). RAD allow process to be measured accurately which can prevent the project exceed the given time. RAD gives a decrease being developed time, and the capacity to accumulate constant client feedback (Scott, 2016). RAD follows the process of 4 phases.

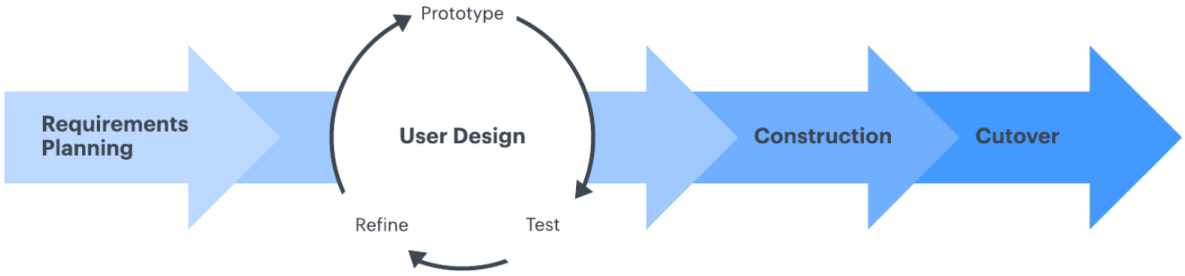

Figure 1.1 Rapid Application Development (Lucidchart Content Team, 2018)

Phase1: Requirements Planning

In the initial phase, current problem and the requirement of project have to defined and finalize the requirement. After discussion with supervisor, project scope, project objective and the current problem are decided.

Phase2: User Design

In the second phase, the user feedbacks are gathered to allow initial modelling of prototype. Every time a prototype is done, it undergoes a test and get review from supervisor. Then the prototype is refine based on the suggestion and comment from supervisor to ensure the system meet the expectation. This process is repeated until it reaches a satisfactory design.

Phase3: Construction

During this phase, the prototype done in phase2 is converted into a working model. The vast majority of the application coding, testing and integration happens in this phase. The system is still able to make any changes, suggestion or new ideas throughout the process. This process is iterative to ensure the components of the system are met the requirement of the project.

Phase4: Cutover

During the implementation phase, the finished product is ready for launching to live production. Every component of the system is move to the production which allow a full-scale testing to be taken.

1.6 Significance of Project

E-auction budding and selling system acts as a platform for students to sell and buy second-hand products. This system is accessible from desktop, laptop and also mobile phone, which will be easily to use by students. By using this system, transaction of the second hand goods can be easily done as it provides a clearer display of goods rather than current trading system by which students can only search their desire goods on Facebook group and WhatsApp group.

E-auction budding and selling system can also help students to save their time to find second hand stuff. Students do not need to scroll throughout the Facebook group just to find one product. They can use the search function in the system to find their desire product just in one click.

1.7 Project Schedule

FYP 1

Task Name	Duration	Start	Finish
FYP 1			
Phase 1	**55d**	**22/9/2018**	**16/11/2018**
1.1 Identify Opportunities/Problem	2d	22/9/2018	23/9/2018
1.2 Gather Information/Requirements	2d	24/9/2018	25/9/2018
1.3 Prepare Brief Proposal	4d	26/9/2018	29/9/2018
1.4 Prepare Final Full Proposal	20d	30/9/2018	19/10/2018
1.5 Prepare Chapter 1: Introduction	7d	20/10/2018	26/10/2018
1.6 Prepare Chapter 2: Literature Review	20d	27/10/2018	16/11/2018
Phase 2	**29d**	**17/11/2018**	**15/12/2018**
2.1 Prepare Chapter 3: Methodology	3d	17/11/2018	19/11/2018
2.2 Design data flow diagram	10d	20/11/2018	29/11/2018
2.3 Design database	4d	30/11/2018	3/12/2018
2.4 Design interface	4d	4/12/2018	7/12/2018
2.4 Prepare Prepare FYP 1 Final Report	8d	8/12/2018	15/12/2018

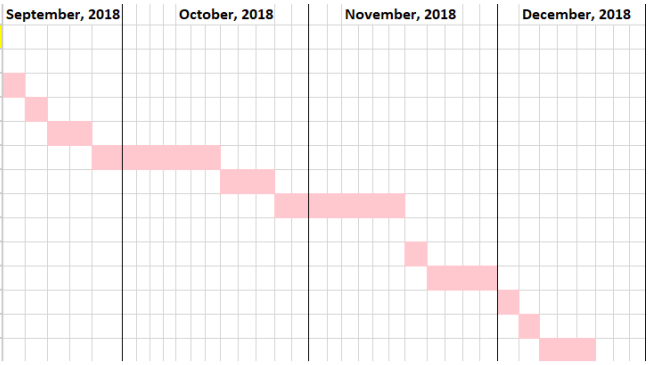

Figure 1.2 Gant Chart for FYP 1

FYP 2

Task Name	Duration	Start	Finish
FYP 2			
Phase 2	**142d**	**15/12/2018**	**5/5/2019**
Cycle 1	**30d**	**15/12/2018**	**13/1/2019**
4.1 Develop Prototype	20d	15/12/2018	3/1/2019
4.2 Test Prototype	2d	4/1/2019	5/1/2019
4.3 Refine Prototype	8d	6/1/2019	13/1/2019
Cycle 2	**7d**	**14/1/2019**	**20/1/2019**
4.4 Test Prototype	2d	14/1/2019	15/1/2019
4.5 Refine Prototype	5d	16/1/2019	20/1/2019
Phase 3	**106d**	**20/1/2019**	**5/5/2019**
4.3 Develop Final Product	54d	20/1/2019	15/3/2019
4.4 Development Testing	10d	16/3/2019	25/3/2019
4.5 Refine System	35d	26/3/2019	29/4/2019
4.6 Prepare Chapter 4: Implementation	7d	29/4/2019	5/5/2019
Phase 4	**27d**	**5/5/2019**	**31/5/2019**
5.1 Lauching to Production	4d	5/5/2019	8/5/2019
5.2 Documentation	5d	9/5/2019	13/5/2019
5.3 Prepare Chapter 5: Conclusion	16d	14/5/2019	29/5/2019
5.4 Final Report Submission	2d	30/5/2019	31/5/2019

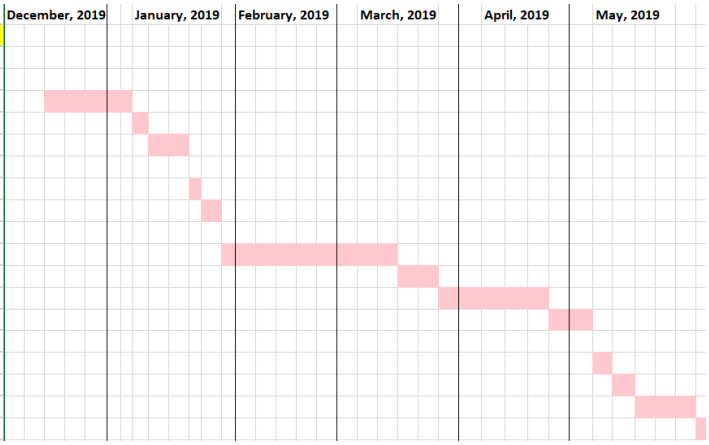

Figure 1.3 Gant Chart for FYP 2

1.8 Project outcome

The E-auction system allow seller to conduct an auction for their stuff. When there exists multiple buyer, seller can gain extra profit for that product. There actually has a large market for the system as every year have thousands of graduate student and new intake student. The system allows people to consider buy for second hand stuff instead of buy a new one. It also allows people to sell their stuff that don't need to earn some money instead of throwing them away. By using the system, a lot of time can be saved as they don't need to search the item by scrolling a lot unnecessary stuff.

1.9 Conclusion

In conclusion, E-auction bidding and selling system provide a platform for seller to sell their unused goods, and buyer can save their money from buying second-hand goods. By reusing the unused products, it can save the environment because the carbon footprint and the CO2 emissions have been reduced. Thus, the E-auction system provides huge advantages to students and also environment.

Chapter 2: Literature Review

2.1 Introduction

Online shopping assumes a significant role in the cutting edge of business environment. The online shopping and searching for item information had likewise wound up mainstream activities (Farag et al., 2007). The launching of smartphone had resulted more on more people like to surf the web or shop online with their mobile phone. Thus, mobile application plays an important role on e-commerce. An e-commerce mobile apps can significantly increase the user due to its convenience. This chapter will discuss on characteristics and features of four existing systems. Pros and cons will also be discussed after reviewing the system.

2.2 Concept of E-auction bidding and selling system

Electronic auction (E-auction) is a service which auctioneer and bidder sell or bid for product or service in internet. E-auction bidding and selling system is designed for the students of University Malaysia Sarawak (UNIMAS) to buy and sell their second hand goods online.

2.3 Type of Applications

An e-commerce system consists of desktop view and mobile view. There are several type of applications to develop a multi-platform E-auction bidding and selling system. Three type of applications will be discussed in below.

2.3.1 Progressive Web Applications

Progressive web applications (PWA) is hosted by a web browser which support HTML5, Cascading Style Sheet (CSS) and JavaScript. Unlike hybrid apps and native apps, PWA can be run in any platform, any devices as long as it has a browser. A PWA is designed to be responsive for mobile users. PWA is not able to access to the device and does not have the feature which native and hybrid apps have but it is possible to have most of the features in future (Martias, 2018).

2.3.2 Native Application

Native applications (native apps) is an application that explicitly structured and produced for a particular mobile operating system. the fundamental mobile operating system are Google's Android, Apple's iOS, and Windows Phone. (William, 2016) states that the Java programming language must be utilized for Android, the Objective C programming language for iOS, and the .NET framework for Windows Phone in order to make true, native applications. Native apps can have benefit from accessing to devices which progressive web apps and hybrid apps cannot. Native apps can use some feature like camera, GPS, microphone, accelerometer and so on. Native apps are relatively faster and responsive than PWA and hybrid apps since it is designed for a specific platform.

2.3.3 Hybrid Mobile Applications

Hybrid mobile applications (hybrid apps) is a Cross-Platform App that can be deployed on website, Android and iOS platform. Hybrid apps is built similar with website as They both use the same technologies like HTML5, CSS, JavaScript and so on. Hybrid apps is the combination of native libraries and web technology. Hybrid approach utilizes the browser engine of the device which renders and shows the HTML content in full screen Web view control (Anmol, Rashmi, Sindhya, 2015). HTML contents are packaged and wrapped into a native container to behave like native apps.

2.4 Chosen Type of Applications

Progressive web applications (PWA) has been chosen to develop the E-auction bidding and selling system. PWA is chosen because the concept of the system is to allow anyone can sell or buy things online in anywhere and anytime. PWA can be run in any platform and any device as long as it contains a browser. PWA uses lower cost and shorter time than hybrid and native apps. However, performance and speed of PWA is relatively lower than native apps. PWA can also access some feature like push notification, offline work mode and also background synchronization.